

The Builder.

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E have again before us a number of books, connected with architecture, engineering, and construction, concerning which our readers should know something. When we last put together a few general remarks on works then in our hands, it happened that those works were collections of examples, and we found it necessary, without undervaluing the class of books alluded to, or withholding the praise which was justly due to those particular specimens themselves, to comment on the great and absorbing rage for imitation which prevails, the rapidity with which books of examples are multiplied, and the danger which environs those, if such there be, who would deviate from precedent, and endeavour to make the past benefit the present, rather than the present conform and yield to the past. "The artist, essentially a creator," it was said, "is turned into a measurer and caster: seeking vainly in the past what the present requires and the future will expect."

The books now before us chiefly relate, by coincidence, rather to principles, and some of them will call hereafter for more lengthened examination than we can give in the course of this running commentary. Foremost amongst them, as the result of long and patient inquiry, stands the second part of "Ancient Gothic Churches, their Proportions and Chromatics," by Mr. W. P. Griffith.* In the first part of this curious work, which our readers will remember we noticed some time since,† the author stated his intention of issuing "from time to time, similar parts, agitating, defending, and promulgating the deeply interesting subject of architectural construction by geometry." This is the first fulfilment of the pledge, and those who examine it will be obliged to admit that in it, Mr. Griffith has very greatly advanced the subject. Our own opinion that the architectural productions of the middle ages were erected on set principles,—that caprice had no share in the general arrangement, and little, if any, even in the ornamentation of Gothic structures,—and that Geometry was the foundation of mediæval art,—has been long known to our readers, and is now becoming generally received as an established fact.

"In the early periods," says Mr. Griffith, "the geometry of squares and circles was undisguised; but when it was applied to the distribution of foliage, its apparent harshness was cloaked by the leaves and flowers; and although its utility in equally distributing the parts was the same, yet a greater elegance was effected by the introduction of foliage. In Brandon's Analysis (Examples?) of Gothic Architecture, Section 1, Norman, plate 2, the label to the doorway is composed of an ornament formed of a circle with a square inscribed; the diagonals and diameters having been inserted, small circular ornaments are struck from points produced by the diameters on the

sides of the square. In this may be traced the germ of the future tetrafoil."

Although regular geometrical figures proportioned the spaces for flowers, foliage, and other decorations, when these were filled in, the external lines were removed, no straight lines remain, and to the investigator alone is it known that they have been thus proportioned. "All the beauty," says our author, "for which Greek and Gothic architecture, and all pure architecture, is famed, we attribute to the pure geometry of the Greeks. Modern mathematics will not do much towards improving the architecture of the ancients. It may confuse it; it will not surpass it. But the ancient geometry of regular figures is not worn out, neither has it been superseded; and whilst we possess it, and use it, we may yet realize many beautiful buildings. There seems to be an innate feeling in man to dislike that which is simple. He would much sooner waste years in searching in the dark, even if he never found any thing, than acknowledge that any beauty can be created by simple means."

Of the general arrangement of ancient churches on a geometrical system, several extraordinary examples are given, in addition to those which have preceded; thus Preston Church, near Faversham, is shown to be founded on an equilateral triangle, and regulated by the subdivisions of this to a remarkable extent. This structure, like many other small country churches, has but one aisle, and in this case the primary line or base of the equilateral triangle must be set out the same as if there were two aisles,—the perfect church being the object to be ultimately attained, although built with but one aisle in the first instance. In the case of Faversham Church, this line is found to be 50 feet, and by this the several portions of the church are proportioned. The mode of proceeding, so well as we can explain it without a diagram, he shews to have been this. A circle was inscribed around the first equilateral triangle, which had the west wall for base, and a reversed triangle was then drawn within the circle, forming the conjoint equilateral triangle so well known in masonry. The extremities of the circle, at the sides, are found to give the projection of the buttresses, and a line drawn parallel to the west wall at the eastern extremity of the circle, gives the termination of the south aisle, and one side of the tower. The altitude of the triangle which has a base of 50 feet, is 43·9: adding to this one foot, in consequence of the west wall of aisle being one foot less in thickness than the west wall of nave, makes 44 feet 9 inches, which is exactly what the length of the aisle is found to be. Inserting two conjoint equilateral triangles in the hexagon, produced by the first formed triangles, divides the figure into what our author terms units or numbers, of which the base of the triangle has six, each 8 feet 4 inches by 7 feet 3½ inches in height. A repetition eastward of the conjoint triangles within a circle, marks, by the eastern extremity of the circle, the end of the chancel, and by the base of one of the triangles, the chancel arch. The length of the nave is 8 of the units before mentioned; and the length of the chancel 6 units, or 43 feet 9 inches. The triangles, according to our author, also decide the width of the opening of the chancel arch, the width of the windows, &c.

In Tong Church, Salop, which has two aisles, a similar proceeding gives similar results: in this the base is 52 feet. The extremity of the circumscribing circle gives the

termination of the nave and one side of the tower, which here stands between the nave and the chancel; and a repetition of the triangles and circle gives the eastern termination of the chancel, and the line of the chancel arch very nearly. The position of the columns which separate the nave from the aisles is also marked out by the intersections of the triangles.

The system may have been simpler than is here supposed, and may not have been carried so far, but that the proportions of these churches were arranged on some geometrical system, is as certain as that a watch must have had a maker. Nor is it at all destructive of the theory to point out that, in some cases, the determining lines come in the middle of the walls, and at others outside them; such slight deviations may be only apparently such (explainable when the matter is more fully comprehended), or may be owing to the operations.

In Croydon Church, where the given line, or width of the church, is 80 feet, it is divided into units, each having for its base 8 feet, and its altitude 7 feet, and our author states, that from centre to centre of the columns dividing nave from aisles, are four units, equal to 32 feet; three units give the width of the chancel, equal to 24 feet; the south porch is contained in four units, the north porch in eight. The altitude of eleven units gives the length of the nave and aisles; the length of the chancel is marked out by eight units, and the length of the chapels, or chancel aisles, including the east wall, by five units;—sufficiently curious, the most sceptical will surely admit.

Salisbury Cathedral is very singularly developed by the square, and in the sections of some of the cathedrals the existence of a system is made evident beyond a doubt. We may not dwell longer, however, on this work, except to congratulate the author on the satisfactory advance he has made.

It is an easy and natural progression from this endeavour to make clear the geometrical system of the mediæval architects, to the new edition of Rickman's "Attempt to Discriminate the Styles of Architecture in England," which Mr. Parker* has just now published in a form which would have gladdened the heart of its author if he had been alive. Very little additional matter has been added; for, as the editor observes, notwithstanding the numerous works which have appeared within the last five or six years, it is surprising how very little real information has been added to that which Mr. Rickman collected and digested. What the book wanted was proper pictorial illustration, and this it has now received in a profuse and extraordinary degree. A few of the illustrations are from other works, but the majority are from original drawings, executed expressly for the purpose, and have the disastrous effect of rendering all former versions of the work comparatively worthless. Those who have Rickman, equally with those who have not, must buy the present edition. We must take one exception to the illustrations,—an exception which applies to another work from the same publisher,—and that is as to the unsatisfactory manner in which the illustrations which relate to classic architecture are executed, as compared with those of the mediæval period. While the latter are clear, precise, sparkling, and beautiful, the former are tame, coarse, and incorrect. We hope Mr. Parker will remedy this in the next edition, and in the meantime commend it

* Published by the author, 9, St. John's-square.

† See p. 259, Vol. V.

* 372, Strand; and Broad-street, Oxford.